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October 3, 2006

Ralph Svetich
DRMS Project Manager
Department of Water Resources
P.O. Box 942836
Sacramento, CA 94236-0001

RE: DUCKS UNLIMITED'S COMMENTS ON THE DELTA RISK MANAGEMENT
STRATEGY: INITIAL TECHNICAL FRAMEWORK PAPER ENVIRONMENTAL
RISK ASSESSMENT

Dear Mr. Svetich,

Ducks Unlimited, Inc. (DU) is an international waterfowl and wetland habitat conservation organization with over one million members, supporters, and volunteers in the United States. The mission of DU is to conserve, restore, and manage wetlands and associated habitats for North America's waterfowl, other wildlife and the people who enjoy and value them. Working in collaboration with private landowners, other non-governmental organizations, and state and federal agencies, DU has conserved over 11 million acres on the North American continent during our 70-year history.

In the Delta, DU has completed 46 wetlands restoration and protection projects for a conservation investment of over \$9.5 million, along with our various federal, state and private partners. These projects span about 20,000 acres in the Delta.

I am limiting my comments to a general assessment only, because the Technical Framework is in initial phases of preparation, and general comments at this time seem most appropriate. I hope that you will contact individuals referenced for further detailed information as you develop the Technical Framework. At a later point in the paper's development I hope there will be an opportunity to comment in greater detail.

The Technical Framework Needs to More Fully Address Impacts of Levee Failure on
Waterfowl and Other Water Birds

While numerous aquatic species are addressed in detail in the draft Technical Framework, other important species dependant on aquatic and wetland environments need to be emphasized as well. There are non aquatic species dependant on the Delta that would be affected by levee failures and which have high regulatory and societal importance.

The Migratory Bird Treaty Act (Act) implements various treaties and international conventions between the U.S. and Canada, Mexico, Japan, and the former Soviet Union. The purpose of these international agreements and the enabling Act is to provide for the conservation and management of migratory birds, such as waterfowl species shared among the countries that are party to the treaties and conventions, and among the states and provinces within each country.

Waterfowl and other migratory birds in the Delta are managed and protected through these treaties and whatever happens in the Delta to harm these birds and their habitat affects the interests of other states and countries. Current joint federal-state-private planning governing waterfowl populations in the Delta sets the number of wintering waterfowl using the Delta at about one-half million birds with a habitat restoration/protection goal of about 100,000 acres of habitat. Waterfowl are dependant on Delta wetlands and, to a significant degree, on Delta agriculture for survival in the winter and for spring migration staging, as well as for spring and summer breeding and rearing.

Besides the regulatory significance of waterfowl, ducks and geese have significant social significance to hunters and bird watchers. Migratory bird hunters alone spend over \$116 million in California each year on hunting, according to a 2001 survey by the U.S. Fish and Wildlife Service.

Waterfowl should be addressed in the Technical Framework to the same extent as other resources having have high regulatory and societal importance. Levee failure would have both negative and possible positive benefits for waterfowl and other water birds. Specific species of waterfowl that would best serve as keystone species are canvasback and northern pintail.

For additional details on current joint state-federal-private management planning for waterfowl in the Delta please contact Dr. Fritz Reid, DU's Manager of Conservation Planning at 916-852-2000.

Fish Larvae, Juveniles and Adults Entrained Onto Islands as a Result of Levee Failure May Not Sustain 100% Mortality

The Technical Framework Paper indicates no information may be available on survival of fish entrained onto a flooded island. In fact, there is information on survival and growth of fish entrained onto areas that closely mimic a Delta island and surrounding environment. Currently DU is studying habitat use by salmon (juvenile) and other species in areas behind levees, where wetland restoration work is underway to restore lower river floodplains adjacent to rivers in the Pacific Northwest by creating breeches in levees along rivers such as the lower Columbia and Willamette Rivers. DU researchers are finding newly flooded areas (areas that had been drained and dry behind levies for decades) provide what appears to be an advantage for winter and spring rearing and that the fish are easily able to navigate out to the mainstem river, as long as passable openings

remain available to fish. For more information please contact Cindy Baker, who is the principal DU researcher on the study and who is using data from the work as part of a Doctoral Dissertation (360-885-2011).

Other relevant work has taken place in the San Francisco Bay/Delta area, where researchers looking at San Pablo wetland restoration found that fish entrapment was not present after dikes were breached at Tubbs Island or Toley Creek. For further information on the studies and publications relevant to this work please contact Dr. Fritz Reid at 916-852-2000.

Still more relevant work has been conducted along the Sacramento River in the Yolo Bypass¹. There juvenile salmon had significantly greater growth rates when passing through the Yolo Bypass rather than migrating down the Sacramento River. Improved growth rates in the floodplain behind the levees were the result of higher prey consumption, reflecting greater invertebrate productivity on the floodplain and juvenile fish had little problem returning to the river from the floodplain. Additional work described the effect of water receding off floodplains and water control structures on fish stranding.

Further, considerable work has been conducted on entrainment of various life stages of fish into oxbows and other areas behind revetments and levies along large mainstem rivers in the central U.S. that have been confined by various types of channelization structures and levees. Much of this work was conducted in the 1970s and early 1980s. I can help provide starting points for searching relevant literature if necessary.

We appreciate the opportunity to provide input regarding this important issue. If you have any questions or desire further information regarding these comments, please feel free to contact me at 916-852-2000.

Sincerely,

A handwritten signature in black ink, appearing to read "Rudolph A. Rosen". The signature is fluid and cursive, with a long horizontal stroke at the end.

Rudolph Rosen, Ph.D.
Director

¹ Sommer et al. 2001. Floodplain rearing of juvenile Chinook salmon: evidence of enhanced growth and survival. Canadian Journal of Fish and Aquatic Science 58: 325-333; Sommer et al. Habitat use and stranding risk of juvenile Chinook salmon on a seasonal floodplain. North American Journal of Fisheries Management 25: 1493-1504